MAI Systems Corp. v. Peak Computer, Inc.: Using Copyright Law to Prohibit Unauthorized Use of Computer Software

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I. INTRODUCTION

Copyright law as applied to computer software attempts to balance the interests of software developers and software users. Copyright law protects the interests of software developers by giving them exclusive rights to reproduce, prepare derivative works from, and publicly distribute their computer programs.[1] Software developers' exclusive rights to reproduce their programs must, by necessity, be limited because programs, and hence computers, cannot be used without copying the programs. Therefore, to protect software users' rights, copyright law must acknowledge and shelter those circumstances under which copying of programs is required for the computer to be used.

The computer software case of *MAI Systems Corp. v. Peak Computer, Inc.*,[2] as decided by the Ninth Circuit, illustrates the problem of balancing the interests of software developers and users. This Comment explores the problem by critiquing the Ninth Circuit's opinion in the *MAI Systems* case. Part II explains the circumstances under which the copying of software is required so that it may be used. Part III reviews the case of *MAI Systems Corp. v. Peak Computer, Inc.* Part IV presents important factors the Ninth Circuit failed to consider in deciding *MAI Systems*. Part V reviews the case of *Advanced Computer Services v. MAI Systems Corp.*,[3] a related case in which MAI Systems Corporation (MAI) asserted the favorable decision from *MAI Systems* against other parties. Part VI presents some difficulties in applying the *MAI Systems* and *Advanced Computer Services* decisions in other situations.

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[1] 17 U.S.C. § 106 (1988). Section 106 states in part:

> Subject to sections 107 through 120, the owner of a copyright under this title has the exclusive rights to do and to authorize any of the following:
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> (1) to reproduce the copyrighted work in copies . . .;
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> (2) to prepare derivative works based upon the copyrighted work;
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> (3) to distribute copies . . . of the copyrighted work to the public by sale or other transfer of ownership, or . . . by lease . . . .

Id. § 106 (1)–(3).

[2] 991 F.2d 511 (9th Cir. 1993), *cert. dismissed*, 114 S. Ct. 671 (1994).

[3] 845 F. Supp. 356 (E.D. Va. 1994).

II. THE NECESSITY OF COPYING TO USE COMPUTER SOFTWARE

Computer software presents unique copyright protection problems because it must be copied to be used by the computer. Copying is required due to the fact that computers can use only programs that are in "executable" form.[4] Software developers write computer programs that are sequences of instructions telling the computer how to accomplish a task.[5] Software developers do not write computer programs in a form that computers understand and can use. Executable computer programs (programs that a computer understands and can use) are the result of a multi-step translation of the software developer's original work.[6] The translation of the original work into an executable form is accomplished through the use of other specialized

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[4] JAMES V. VERGARI & VIRGINIA V. SHUE, FUNDAMENTALS OF COMPUTER-HIGH TECHNOLOGY LAW 25 (1991). The word "executable" is used to distinguish programs that are in a form the computer can execute from programs in a form the computer cannot execute. Executable code is also called machine code, machine-readable code, machine language code, and object code. *See, e.g.*, V. CARL HAMACHER ET AL., COMPUTER ORGANIZATION 300–01 (1978) ("A machine language program can be executed on that computer without the aid of any other program.").

For additional technical background information, see Mark M. Friedman, *Copyrighting Machine Language Computer Software—The Case Against*, 9 COMPUTER L.J. 1 (1989). Friedman argues:

> Two fundamental constitutional difficulties arise in using copyright law to protect machine readable [executable] software. First, such software is a utilitarian work, not the constitutionally mandated "writings." Furthermore, machine language [executable] code does not communicate to human beings, rendering moot the disclosure requirement which is part of the social contract forming the underlying constitutional basis for copyright protection—the promotion of "Science and the Useful Arts."

Id. at 18 (citations omitted); *see also* Pamela Samuelson, *CONTU Revisited: The Case Against Copyright Protection for Computer Programs in Machine-Readable Form*, 1984 DUKE L.J. 663. Samuelson argues the constitutional goal of promoting the progress of science and the arts is undermined "because software manufacturers generally market only machine-readable [executable] forms of programs, thereby withholding not only their ideas, but much or all of the manner in which those ideas are expressed." *Id.* at 672. Furthermore, "[i]n machine-readable [executable] form, the utility of computer programs cannot be separated from their non-utilitarian aspects, and for this reason as well they ought to be deemed uncopyrightable." *Id.* at 741.

[5] VERGARI & SHUE, *supra* note 4, at 24; *see also* CHRISTOPHER J. MILLARD, LEGAL PROTECTION OF COMPUTER PROGRAMS AND DATA 13 (1985).

[6] VERGARI & SHUE, *supra* note 4, at 24–25.

computer programs called compilers, linkers, and loaders.[7] It is the resulting executable code that software vendors distribute to users.[8]

Once the executable code has been installed on the machine, the computer must make one or more copies of the program's instructions in order to run the program. First, the program instructions must be loaded or "copied" into the computer's random access memory (RAM).[9] At any time, it is possible that only a portion of the program is in RAM. As each instruction of the program is about to be executed, it is copied from RAM to the computer's instruction register.[10] Therefore, at this point, there are at least two copies of the program's instructions in the computer. Depending on the configuration of the computer's hardware, additional copies may be present (e.g., in cache memory).[11]

Whether every instruction of the program is copied during the course of program execution depends upon, among other things, the program's design, the amount of memory available, and what the user wants the computer to do as the program executes. For short, simple tasks, the computer may copy only a small portion of the entire program's set of instructions.[12] For long, complicated tasks, the computer may eventually copy every program instruction, possibly more than once.[13]

Computer software thus differs from other types of copyrighted works because it must be copied to be used by the computer and hence, the user.[14] Other types of copyrighted works, such as books and recordings, need not be copied by the reader or listener to be used.[15] Because computer software must be copied to be used, it is important to determine in what contexts copying for use is, or should be, permitted by copyright law.

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[7] *Id.* at 25; MILLARD, *supra* note 5, at 14.

[8] VERGARI & SHUE, *supra* note 4, at 23.

[9] HAMACHER ET AL., *supra* note 4, at 11 ("To perform a given task, an appropriate program consisting of a set of instructions is stored in the main memory."). For a detailed, technical discussion of program execution, see *id.* at 96–107.

[10] *Id.* at 9–12. The Central Processing Unit (CPU) contains one or more high-speed storage cells called registers. *Id.* at 9. For program execution, data is transferred between the CPU registers and memory. *Id.* at 11. The CPU's instruction register contains the instruction being executed. *Id.*

[11] *Id.* at 245. A cache memory is a special, fast memory that contains active segments of programs so total execution time of the program is reduced. *Id.*

[12] *Id.* at 229–30, 252–54.

[13] *Id.*

[14] RAYMOND T. NIMMER, THE LAW OF COMPUTER TECHNOLOGY 1-103 (2d ed. 1992) (noting a program in machine language can be used only through preparation of a copy).

[15] *Id.* (noting books can be read without copying).

III. THE NINTH CIRCUIT'S OPINION IN *MAI SYSTEMS CORP. V. PEAK COMPUTER, INC.*

The *MAI Systems*[16] case is important because it places limitations on users' rights to copy software for execution on a computer. To understand these limitations, it is necessary to review the *MAI Systems* case and examine the Ninth Circuit's analysis of the copyright infringement issue.

A. *Facts and Procedural History*

MAI manufactures computers.[17] It also designs and implements software that runs on the computers it manufactures.[18] The software is licensed to customers "for their own internal information processing."[19] MAI licenses allow for the loading of the software into RAM by MAI customers, but prohibit "[a]ny possession or use . . . not expressly authorized."[20] MAI customers are not permitted to make the software available to others.[21] Finally, MAI services the hardware and software for its machines.[22] Peak Computer (Peak), organized by a former MAI employee, is an independent service organization that maintains computer systems for its clients.[23] Peak's clients include customers of MAI's computer systems.

MAI has copyright interests in the software it designs and implements, including the operating system software that is required to run other programs on the computer.[24] MAI's operating system software is designed to load automatically from the hard disk into the computer's RAM every time the computer is turned on.[25] Servicing of the computer—whether by Peak service technicians or anyone else—requires that the computer be turned on and thus, the automatic loading of the operating system into RAM takes place.

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[16] MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511 (9th Cir. 1993), *cert. dismissed*, 114 S. Ct. 671 (1994).

[17] *Id.* at 513. MAI has since filed for bankruptcy protection and reorganization under Chapter 11 of the Bankruptcy Code.

[18] *Id.*

[19] *Id.* at 517.

[20] *Id.* at 517 n.3.

[21] *Id.* at 517.

[22] *Id.* at 513.

[23] *Id.*

[24] *Id.* at 513, 515.

[25] *Id.* at 517.

MAI filed suit against Peak for copyright infringement.[26] MAI claimed that Peak violated its copyright interest in the operating system software when it was loaded into RAM after Peak turned on the computer for servicing.[27] MAI argued that the loading of the operating system into RAM constituted copying for the purposes of copyright law.[28] In the absence of permission to copy the software, MAI argued that such an act was infringement.[29] According to MAI, Peak's use of the software was a use not expressly authorized under the MAI licensing agreement.

Upon a motion filed by MAI, the district court granted partial summary judgment in favor of MAI and issued a permanent injunction enjoining Peak from copying any of MAI's copyrighted works.[30] The copying enjoined included "the acts of loading, or causing to be loaded, directly or indirectly, any MAI software . . . into . . . [RAM] of a computer system."[31] On appeal, the Ninth Circuit upheld the district court's grant of partial summary judgment and the permanent injunction on the issue of copyright infringement.[32]

B. *The Ninth Circuit's Decision*

As owner of a copyright interest in its operating system software, MAI had the exclusive rights to reproduce and publicly distribute the copyrighted work,[33] subject to some limitations.[34] To prevail in its copyright infringement action against Peak, MAI was required to prove ownership of a copyright and copying that exceeded the scope of the license.[35] To prove ownership, MAI

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[26] *Id.* at 513, 517. In its complaint, MAI also alleged misappropriation of trade secrets, trademark infringement, false advertising, and unfair competition. *Id.* at 513.

[27] *Id.* at 518.

[28] *Id.*

[29] *Id.* at 517.

[30] *Id.*

[31] *Id.* at 515.

[32] *Id.* at 519.

[33] 17 U.S.C. §§ 106(1), (3) (1988). Section 106(1) gives the owner of the copyright the exclusive right to reproduce or authorize the reproduction of the copyright work in copies. Section 106(3) gives the owner of the copyright the exclusive right to distribute copies of the copyrighted work to the public by sale or other transfer of ownership, or by rental, lease, or lending.

[34] 17 U.S.C. § 106 (1988 & Supp. V 1993). The limitations are set forth in §§ 107 through 120 of the Copyright Act. *Id.*

[35] *MAI Sys.*, 991 F.2d at 517 (citing S.O.S., Inc. v. Payday, Inc., 886 F.2d 1081, 1085 (9th Cir. 1989)).

provided the court with its copyright registrations.[36] Thus, the only significant issues facing the court were whether MAI's software was copied by Peak and whether Peak's copying of the protected work was beyond the scope of the licensing agreement with MAI customers.[37]

1. *Did Peak Copy MAI's Operating System Software?*

Under the Copyright Act,[38] "copies" are defined as "material objects, . . . in which a work is fixed by any method now known or later developed, and from which the work can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device."[39] A work is fixed if it "is sufficiently permanent or stable to permit it to be perceived, reproduced, or otherwise communicated for a period of more than transitory duration."[40]

Peak argued it did not copy the operating system software because the copy made in RAM was not fixed.[41] As soon as the computer was turned off, the contents of RAM disappeared.[42] Therefore, the copy in RAM was transient. The court, however, was convinced that because after loading the software it was possible to view information regarding the computer's status, the copy in RAM met the "sufficiently permanent or stable" requirement of the Copyright Act.[43]

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[36] *Id.* at 515. Pursuant to 17 U.S.C. § 408 (1988 & Supp. V 1993), the owner of a copyright may obtain registration of the copyright claim by delivering to the Copyright Office a copy of the work, an application, and an application fee. Although registration is not a prerequisite for the attachment of copyright interests, it is a prerequisite for an action for infringement. 17 U.S.C. § 411 (1988 & Supp. V 1993). Pursuant to 17 U.S.C. § 410(c) (1988), a registration "constitutes prima facie evidence of the validity of the copyright and of the facts stated in the certificate." Therefore, in producing the registrations, MAI produced rebuttable presumptions of ownership.

[37] It should be noted that, according to the facts of the case, Peak possessed and used some unlicensed copies of MAI software. *MAI Sys.*, 991 F.2d at 519. Peak's possession and use of unlicensed MAI software clearly violates MAI copyright interests. The focus of the criticism in this Comment is on the court's conclusion that Peak violated MAI's copyright interests by using operating system software licensed to, and within the lawful possession of, MAI customers.

[38] 17 U.S.C. §§ 101–1010 (1988 & Supp. V 1993).

[39] *Id.* § 101.

[40] *Id.*

[41] *MAI Sys.*, 991 F.2d at 518.

[42] VERGARI & SHUE, *supra* note 4, at 16; HAMACHER ET AL., *supra* note 4, at 234.

[43] *MAI Sys.*, 991 F.2d at 518.

2. *Was Peak's Copying Unauthorized?*

Under MAI's licensing agreement, only customers were permitted to use the software.[44] Customers were not permitted to make the software available to others.[45] Peak, as a third party to the transaction between MAI and its customers, was not permitted to use the software. Therefore, the court found that Peak's use of the operating system software exceeded the scope of the licensing agreement and, as a result, was unauthorized.[46] The court thus interpreted the provision prohibiting MAI customers from making the software available to others to include a prohibition on authorizing others to use the programs in the computer.

3. *Rejection of the Copyright Act's Section 117 Computer Program Limitation*

In completing its analysis, the Ninth Circuit rejected the application of section 117 of the Copyright Act which provides a computer program specific limitation on a copyright owner's exclusive rights.[47] Pursuant to section 117, the *owner* of a computer program is permitted to make or authorize the making of another copy of that program provided "that such a new copy . . . is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner."[48] Thus, by authority of section 117 the owner of the copy "acquires a protected interest in being able to exercise its ownership and make use of its copy."[49]

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[44] *Id.* at 517 n.3.

[45] *Id.*

[46] *Id.* at 518.

[47] 17 U.S.C. § 117 (1988 & Supp. V 1993). Section 117, "Limitations on exclusive rights: Computer programs," states in part:

> Notwithstanding the provisions of section 106, it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy . . . of a computer program provided:
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> (1) that such a new copy . . . is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner . . . .

Id. § 117(1) (Supp. V 1993).

[48] *Id.*

[49] NIMMER, *supra* note 14, at 1-102.

Although it is not clear what factors the court considered, it concluded that MAI customers are licensees rather than owners of the programs so they are not eligible for protection under section 117. Therefore, the copying by Peak could not be authorized by an MAI customer.[50] In concluding that Peak violated MAI's copyright interests, the court limited its concern to the "permitted scope [of use] of licensed software."[51] The court focused on the contract, as established by the licensing agreement, between MAI and its customer. The court found that Peak was guilty of copyright infringement because the software was copied under a scenario not identified in the licensing agreement. The conclusion was reached without any consideration of whether Peak's actions were beneficial to the licensees and whether Peak's actions were detrimental to MAI's copyright interests.

IV. IMPORTANT FACTORS IGNORED BY THE *MAI SYSTEMS* COURT

The Ninth Circuit's conclusion that Peak was guilty of copyright infringement is problematic because it resulted in MAI using its copyright interests in its software to control who used the computer. By prohibiting Peak's use of the computer, MAI effectively extended its copyright monopoly by reserving an exclusive right to service the hardware on which the software runs. Therefore, MAI's copyright interests were used to protect the value of a secondary repair market rather than the market for the copyrighted work itself. Such a result defeats the purpose of copyright law which is to protect an author's interest in the copyrighted work.[52] The *MAI Systems* court could have concluded that Peak did not violate MAI's copyright interests under two scenarios. First, the court could have concluded that the section 117 limitation was applicable because MAI customers were owners rather than licensees. Second, whether the issue of authorization for copying was governed by section 117 or by a licensing agreement, the court could have applied a fair use analysis to conclude Peak's copying should be sheltered under copyright law.

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[50] *MAI Sys.*, 991 F.2d at 518 n.5 ("Since MAI licensed its software, the Peak customers do not qualify as 'owners' of the software and are not eligible for protection under § 117.").

[51] *See, e.g.*, Stephen J. Davidson, *Selected Legal and Practical Considerations Concerning 'Scope of Use' Provisions*, 10 THE COMPUTER LAW. 1, 1 (1993) (expressing concern that in some situations, licensing restrictions or lack of express authorization for a particular use "may be used by the licensor in an effort to extract excessive license or renewal fees").

[52] Robert A. Kreiss, *Section 117 of the Copyright Act*, 1991 B.Y.U. L. REV. 1497, 1501.

A. *The Section 117 Computer Program Limitation on Exclusive Rights*

Without explanation, the Ninth Circuit dismissed the application of section 117 in a single footnote claiming that "since MAI licensed its software, the Peak customers do not qualify as 'owners' of the software and are not eligible for protection under section 117."[53] However, in deciding whether section 117 applies to a transaction, some commentators have proposed looking beyond the vendor's characterization of the transaction as a sale or license.[54] The label of the transaction by which customers obtain the software (e.g., by sale or by license) should not be controlling.[55] Instead, "[o]wnership of a copy should be determined on the actual character . . . of the transaction by which the user obtained possession."[56] It should not matter "whether the transaction involved the sale of the copyright or a license to use the program."[57] In fact, there is "precedent in copyright caselaw [sic] for disregarding the manufacturer's characterization of transaction, looking through the form of a transaction to its substance to find a sale when the manufacturer asserts there is only a license."[58] Among the factors that should be considered are whether a single payment is made, whether the user has an unlimited right to possession, and whether the user is required to return the copy after a specified time.[59] If the Ninth Circuit had concluded MAI customers were owners, even though subject to a licensing agreement, the section 117 limitation would have applied and the copying would have been authorized, even if MAI did not approve the purpose for which the copy was made.[60] As one court has noted "[s]ection 117(1)

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[53] *MAI Sys.*, 991 F.2d at 518 n.5.

[54] NIMMER, *supra* note 14, at 1-102 to 1-103; Pamela Samuelson, *Modifying Copyrighted Software: Adjusting Copyright Doctrine to Accommodate a Technology*, 1988 JURIMETRICS J. 179, 188-89.

[55] NIMMER, *supra* note 14, at 1-103.

[56] *Id.*

[57] *Id.* at 1-102.

[58] Samuelson, *supra* note 54, at 189 n.46 (citing Straus v. Victor Talking Machine Co., 243 U.S. 490 (1917); Bobbs-Merrill Co. v. Straus, 210 U.S. 339 (1908); F.E.L. Publications, Ltd. v. Catholic Bishop, 506 F. Supp. 1127 (N.D. Ill. 1981), *rev'd*, 214 U.S.P.Q. (BNA) 409 (7th Cir. 1982), *cert. dismissed*, 473 U.S. 923, *and cert. denied*, 474 U.S. 824 (1985)).

[59] NIMMER, *supra* note 14, at 1-103.

[60] As Nimmer notes, "[i]n computer programs, this ownership issue is often confused with whether the end user of the program is a licensee. The license, however, relates to rights in intellectual property. Ownership of a copy is a matter of personal property law." *Id.* at 1-102.

contains no language to suggest that the copy it permits must be employed for a use intended by the copyright owner."[61]

Although section 117 applies only to owners, some commentators argue that the section—whether by judicial interpretation or a change in wording—should apply to licensees and lessees as well.[62] The basis for this position is that the original text of section 117, drafted by the National Commission on New Technological Uses of Copyrighted Works (CONTU), included in the class of beneficiaries all "rightful possessors."[63] In adopting CONTU's recommended amendments to the copyright statute, Congress changed the text of section 117 to read "owners of copies" rather than "rightful possessors."[64] Congress gave no explanation for the change.

It is not obvious why licensees and lessees should be excluded from the safe harbor of section 117.[65] Unlike other limitations imposed on copyright owners' exclusive rights, section 117 is not based on "efficiency considerations, . . . consideration of alternative socially productive uses of the copyrighted work or the need to give authors access to source materials so that they can use them in creating new work."[66] Section 117 was enacted because copies of programs must be made for the computer to run.[67] All users, whether owners, licensees, or lessees need to make copies to run programs.[68] The change to the word "owner" means computer users' rights differ depending upon the transaction by which they acquired rightful possession of a program.

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[61] Vault Corp. v. Quaid Software Ltd., 847 F.2d 255, 261 (5th Cir. 1988).

[62] Kreiss, *supra* note 52, at 1535. Kriess cites *Vault,* 847 F.2d 255 and Foresight Resources Corp. v. Pfortmiller, 719 F. Supp. 1006 (D. Kan. 1989) for the proposition that a possessor of a copy of a computer program may qualify as an "owner" even though the possessor was subject to the terms of a licensing agreement. *Id.* He also cites Hubco Data Production Corp. v. Management Assistance, Inc., 219 U.S.P.Q. (BNA) 450 (D. Idaho 1983) for the proposition that Hubco did not qualify as an owner either because Hubco was a licensee or did not have lawful possession. *Id.*

[63] Samuelson, *supra* note 54, at 188.

[64] *Id.* Under one view, the word "owner" excludes licensees and lessees from the protections of section 117. Kreiss, *supra* note 52, at 1535–36. There is no indication that "Congress intended the word 'owner' in § 117 to include licensees, lessees, or other possessors." *Id.* at 1536. If Congress had meant to include licensees, lessees, and other possessors, it could have adopted the CONTU recommendation. *Id.* at 1536–37. Therefore, pursuant to § 117, "owner" should be given its "ordinary legal meaning" such that only those who acquire title to the copy of the computer program should benefit from the protections of § 117. *Id.* at 1500, 1535.

[65] Kreiss, *supra* note 52, at 1507.

[66] *Id.*

[67] *Id.*

[68] *Id.* at 1538.

The change defeats the spirit of CONTU's recommendation which was to fulfill rightful possessors' expectations regarding their use of computer programs and their ability to authorize others to use those programs under some circumstances.[69]

A liberal interpretation of the word "owner" that extends section 117 protections to licensees and lessees of computer programs seems to support CONTU's original position. The CONTU Report makes clear:

> [T]he law should provide that persons in rightful possession of copies . . . be able to use them freely without fear of exposure to copyright liability. Obviously, creators, lessors, licensors, and vendors of copies of programs intend that they be used by their customers. . . . It is easy to imagine, however, a situation in which the copyright owner might desire, for good reason or none at all, to force a lawful owner or possessor of a copy to stop using a particular program. One who rightfully possesses a copy of a program, therefore, should be provided with a legal right to copy it to that extent which will permit its use by that possessor.[70]

As this language indicates, CONTU foresaw the possibility that without the section 117 exception, a copyright owner could assert his or her copyright interests to prevent a lawful possessor from using a program in a manner, for whatever reason, the copyright owner simply does not like. Copyright owners who wish to control the uses of their programs will license or lease, rather than sell, copies of their programs to avoid application of section 117.[71] Indeed, many software vendors have adopted the practice of distributing software by license only, thus effectively stripping "consumers of rights they would otherwise have under copyright law."[72] According to the CONTU recommendation, the section was intended to protect all rightful possessors, including licensees and lessees. In fact, if section 117 protection is not extended

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[69] Ronald S. Katz & Betsy E. Bayha, *Commentary: Turned On, Turned Off*, THE RECORDER, Apr. 29, 1993, at 8.

[70] Kreiss, *supra* note 52, at 1537 (citing NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS, FINAL REPORT OF THE NATIONAL COMMISSION ON NEW TECHNOLOGICAL USES OF COPYRIGHTED WORKS 31 (1978)).

[71] Richard Raysman & Peter Brown, *Independent Service Organizations*, N.Y. L.J., Sept. 14, 1993, at 3, 6 (noting that a license could serve to restrict a user's rights under § 117).

[72] Samuelson, *supra* note 54, at 188–89; *see also* Raysman & Brown, *supra* note 71, at 6.

to licensees or lessees, "it will rarely be applicable to anyone possessing a copy of computer software."[73]

Although the Ninth Circuit may have been correct in characterizing MAI customers as licensees, the court should have provided a basis for its conclusion. By concluding, without explanation, that MAI customers are licensees only, the court may have denied MAI customers an important right provided by copyright law.

B. *The Fair Use Exception*

In concluding that Peak was guilty of copyright infringement, the Ninth Circuit considered only whether the copying into RAM was authorized pursuant to the licensing agreement. The court never considered the possibility that even though Peak's copying of MAI's software was unauthorized, it fell within the "fair use" exception.[74] Fair use identifies permissible copying and "exempts behavior that would otherwise infringe [a] . . . copyright."[75] It attempts to balance the "rights of the . . . [copyright owner] and the rights of subsequent users in an environment where the policies supporting the . . . [copyright owner's] otherwise absolute rights are attenuated or inappropriate."[76] The rights of the copyright owner are subject to the fair use doctrine regardless of the type of copyrighted work.[77]

The fair use doctrine is recognized in section 107 of the Copyright Act[78] and "provides a nonexclusive list of factors considered in determining whether a particular use is an exempted fair use of a copyrighted work."[79] The factors include:

> (1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;[80]

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[73] Katz & Bayha, *supra* note 69, at 8; *see also* Ronald S. Katz & Janet S. Arnold, MAI v. Peak*: An Unprecedented Opinion with Sparse Analysis*, 10 THE COMPUTER LAW. 18 (1993).

[74] Katz & Bayha, *supra* note 69, at 8. A fair use exception is not discussed in the *MAI Systems* opinion. The fact that the court did not discuss the issue suggests that Peak did not raise a fair use argument in its defense.

[75] NIMMER, *supra* note 14, at 1-94.

[76] *Id.*

[77] *Id.*

[78] 17 U.S.C. § 107 (1988 & Supp. V 1993).

[79] NIMMER, *supra* note 14, at 1-95.

[80] 17 U.S.C. § 107(1) (1988 & Supp. V 1993). As one court noted, "initially . . . the fact that copying is for a commercial purpose weighs against a finding of fair use. However, the presumption of unfairness that arises in such cases can be rebutted by the characteristics

(2) the nature of the copyrighted work;[81]

(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole;[82] and

(4) the effect of the use upon the potential market for or value of the copyrighted work.[83]

If the *MAI Systems* court had applied a fair use analysis to Peak's actions, it might have concluded that Peak's copying constituted a fair use of MAI's copyrighted work. Indeed, the Ninth Circuit applied a fair use analysis in a computer software case that came before it one year earlier—*Sega Enterprises v. Accolade Inc.*[84] Sega develops and markets video game software to run on its own game consoles.[85] Accolade took a Sega game cartridge containing executable software and "decompiled" it in order to understand the logic of the original computer program.[86] Using its knowledge of Sega's original program,

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of a particular commercial use." Sega Enters. v. Accolade Inc., 977 F.2d 1510, 1522 (9th Cir. 1992) (citations omitted).

[81] 17 U.S.C. § 107(2) (1988 & Supp. V 1993).

> [This factor] reflects the fact that not all copyrighted works are entitled to the same level of protection. The protection established by the Copyright Act . . . does not extend to the ideas underlying a work or to the functional or factual aspects of the work. To the extent that a work is functional or factual, it may be copied. . . .

Sega Enters., 977 F.2d at 1524 (citations omitted).

[82] 17 U.S.C. § 107(3) (1988 & Supp. V 1993). "The fact that an entire work was copied does not . . . preclude a finding of fair use." *Sega Enters.*, 977 F.2d at 1526 (citations omitted).

[83] 17 U.S.C. § 107(4) (1988 & Supp. V 1993).

> [This factor] bears a close relationship to the 'purpose and character' inquiry in that it, too, accommodates the distinction between the copying of works in order to make independent creative expression possible and the simple exploitation of another's creative efforts. We must . . . inquire whether, "if [the challenged use] should become widespread, it would adversely affect the potential market for the copyrighted work," by diminishing potential sales, interfering with marketability, or usurping the market.

Sega Enters., 977 F.2d at 1523 (second alteration in original) (citations omitted).

[84] 977 F.2d 1510 (9th Cir. 1992).

[85] *Id.* at 1514.

[86] *Id.* at 1514–15.

Accolade wrote and sold video games compatible with Sega's game console.[87] Accolade's "reverse engineering" of Sega's executable software required copying.[88] Sega sued Accolade for copyright infringement.[89]

Accolade's copying of Sega's executable software did not occur as an "essential step" in using the software in a Sega game console.[90] Therefore, the court concluded, section 117's exemption for copies created as an essential step in the use of a computer program did not apply.[91] A fair use analysis was used to resolve the copyright infringement issue.[92] The court considered the possibility of a fair use exception to Accolade's copying because section 117 does not "preclude the assertion of a fair use defense with respect to uses of computer programs that are not covered by section 117, nor has section 107 [fair use] been amended to exclude computer programs from its ambit."[93] This language is particularly important because it suggests that in the *MAI Systems* case, even though the court found that section 117 did not apply, the court should have considered the possibility of a fair use exception.

In analyzing the purpose and character of use (first factor), the *Sega* court found the purpose of the copying was to understand the compatibility requirements of a Sega game.[94] It was indisputable that Accolade ultimately intended to develop and sell a game compatible with the Sega machine.[95] The court distinguished the ultimate purpose from the direct purpose of the copying and concluded the direct purpose of the copying was to understand Sega's executable code.[96] Therefore, "Accolade copied Sega's code for a legitimate, essentially nonexploitative purpose, and that the commercial aspect of its use can best be described as of minimal significance."[97] The court found this factor weighed in Accolade's favor.[98]

The court next analyzed the effect on the potential market for the copyrighted work (fourth factor).[99] This inquiry required the court to

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[87] *Id.*

[88] *Id.* at 1516.

[89] *Id.*

[90] Accolade created the copy so that it could examine details of the software. It did not create the copy so that it could play a game on the Sega console. Hence, the copy was not created as an essential step in using the software.

[91] *Sega Enters.*, 977 F.2d at 1520.

[92] *Id.* at 1520–28.

[93] *Id.* at 1520–21.

[94] *Id.* at 1522.

[95] *Id.*

[96] *Id.* at 1522–23.

[97] *Id.*

[98] *Id.* at 1523.

[99] *Id.* at 1523–24.

determine whether the potential market for the copyrighted work was affected by "diminishing potential sales, interfering with marketability, or usurping the market."[100] The court concluded that even though Accolade copied Sega's software for the ultimate purpose of developing a product compatible with Sega's machine, there was no significant market effect because Accolade's game was not substantially similar to Sega's and, therefore, was unlikely to displace any Sega sales.[101] More importantly, the court noted that "an attempt to monopolize the market by making it impossible for others to compete runs counter to the statutory purpose of promoting creative expression."[102] Therefore, this factor weighed in Accolade's favor.[103]

In analyzing the nature of the copyrighted work (second factor), the court admitted difficulty in characterizing computer software.[104] After examining differences regarding protected expression and unprotected ideas, the court characterized computer programs as "essentially utilitarian" and concluded that many aspects of computer programs are not protected by copyright.[105] As a result, because "programs contain unprotected aspects that cannot be examined without copying, [they are afforded] a lower degree of protection than more traditional literary works."[106] Therefore, this factor also weighed in Accolade's favor.[107]

With respect to the amount and substantiality of the portion used in relation to the copyrighted work as a whole (third factor), the court found Accolade copied the entire work.[108] Therefore, this factor weighed in Sega's favor.[109] However, the court noted "[t]he fact that an entire work was copied does not . . . preclude a finding [of] a fair use."[110]

In *Sega*, the Ninth Circuit analyzed the fair use factors to conclude that although Accolade copied Sega's software, it did not violate Sega's copyright interests. It is surprising that in *MAI Systems*, the Ninth Circuit did not consider the possibility of a fair use exception regarding Peak's use of MAI's software. Had the court completed the fair use analysis in the *MAI Systems*

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[100] *Id.* (citation omitted).

[101] *Id.* at 1523.

[102] *Id.* at 1523–24.

[103] *Id.* at 1524.

[104] *Id.* at 1524–25.

[105] *Id.* at 1526.

[106] *Id.*

[107] *Id.*

[108] *Id.* at 1526.

[109] *Id.*

[110] *Id.* (citing Sony Corp. of Am. v. Universal City Studios, 464 U.S. 417, 449–50 (1984)).

case, it might have concluded that Peak did not violate MAI's copyright interests.

In *MAI Systems*, the purpose (first factor) of Peak's copying of the executable code was to use the computer so it could be repaired. The copy was created in the normal course of using the computer and indeed, it remained internal to the computer. Peak was not interested in copying MAI's software in order to distribute it to others nor was it interested in copying MAI's software in order to develop a competing product. Peak's purpose in copying was, as in the *Sega* case, "essentially non-exploitative."[111]

The *Sega* court's conclusions regarding the nature of the copyrighted work (second factor) and amount used (third factor) are the same in the *MAI Systems* case. MAI's copyrighted work is a computer program which is, as the *Sega* court noted, a utilitarian work that is afforded a lower degree of protection.[112] Peak may have used the entire program, but, as the *Sega* court noted, use of the entire work does not preclude a finding of fair use.[113] Therefore, these factors weigh in Peak's favor.

In considering the effect of the use upon the potential market for or value of the copyrighted work (fourth factor), Peak's copying of licensed operating system software during repair of the computer did not and could not have displaced any sales for MAI's software. Peak's copying had no effect in the market for MAI's software because the copy made was internal to the computer and it was ephemeral. The copy disappeared when the computer was turned off and so it could not be distributed anywhere else. There was no suggestion that Peak made these internal, ephemeral copies available to anyone else. Anyone who wanted a copy of MAI's software for a different use would have to obtain it from another source, presumably MAI. Therefore, Peak's use did not diminish potential sales, interfere with marketability, or usurp MAI's market for its computer software.

Peak's interest in the software was limited to its interest in servicing the computer. The fact that Peak's use may have affected MAI's share of the repair market is not relevant to the discussion because the market for the copyrighted work does not include the repair market for MAI computers. In fact, it appears MAI used its copyright interests in an attempt to monopolize the repair market—a practice, which the *Sega* court noted, runs contrary to the purpose of promoting creative expression.[114] Without considering the possibility of a fair use exception, the Ninth Circuit, perhaps unwittingly, permitted MAI to assert

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[111] *Id.* at 1522–23.
[112] *Id.* at 1526.
[113] *Id.*
[114] *Id.* at 1523–24.

its copyright interests to control use of the computer—and ultimately, the repair market for its machines—rather than simply protect its copyrighted work.

V. USE OF THE *MAI SYSTEMS* CASE AGAINST OTHER PARTIES

Following the Ninth Circuit's decision in *MAI Systems*,[115] MAI sent cease and desist letters, citing the favorable decision, to independent service organizations.[116] This action prompted several independent service organizations to file suit against MAI. In *Advanced Computer Services v. MAI Systems Corp.*,[117] the plaintiffs alleged that MAI engaged in illegal tying and monopolization in violation of the Sherman Act.[118] MAI counterclaimed against the service organizations alleging infringement of its copyrighted software.[119] Using the Ninth Circuit's decision in *MAI Systems*,[120] the district court concluded that the service organizations violated MAI's copyright interests in the operating system software when it was loaded into RAM after the computer was turned on for servicing.[121] In contrast to the Ninth Circuit case, the district court considered two defenses raised by the plaintiffs against MAI's counterclaim—fair use and antitrust violations.[122]

A. *The Fair Use Defense*

In analyzing the purpose and character of the use (first factor), the *Advanced Computer Services* court concluded the purpose was commercial (use of the copyrighted software was in connection with providing maintenance services) and therefore, was presumptively unfair.[123] Next, the court concluded the software's nature (second factor) was functional and so militated against a

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[115] MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511 (9th Cir. 1993), *cert. dismissed*, 114 S. Ct. 671 (1994).

[116] Advanced Computer Servs. v. MAI Sys. Corp., 845 F. Supp. 356, 359 (E.D. Va. 1994).

[117] 845 F. Supp. 356 (E.D. Va. 1994).

[118] *Id.* at 359.

[119] *Id.*

[120] MAI Sys. Corp. v. Peak Computer, Inc., 991 F.2d 511 (9th Cir. 1993), *cert. dismissed*, 114 S. Ct. 671 (1994).

[121] *Advanced Computer Servs.*, 845 F. Supp. at 360, 364.

[122] *Id.* at 364–67.

[123] *Id.* at 364 (citing Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 451 (1984)).

fair use finding.[124] The extent of the copying (third factor) also weighed against a finding of fair use because the MAI software was copied in its entirety as it was loaded into RAM.[125] According to the court, the first three factors weighed against a finding of fair use.

In evaluating the effect of the use on the market for MAI software (fourth factor), the court considered whether the use impaired the marketability of the copyrighted work.[126] The court concluded that the relevant market was the market for licensing MAI's copyrighted software.[127] The unauthorized use, it was decided, "deprives MAI of license fees associated with the use of their software."[128] In reaching this conclusion, however, the court failed to distinguish precisely which uses by the service technicians resulted in MAI's loss of licensing fees. It was undisputed that some of the service organizations possessed and used unlicensed copies of MAI's software.[129] The possession and use of unlicensed MAI software clearly violates MAI copyright interests.[130] The court also noted that the service organizations used the operating system software when servicing computers at MAI customer sites.[131] The court did not, however, explain how MAI was deprived of license fees when the service technicians used the operating system software that had been licensed to, and was within the lawful possession of, MAI customers.[132] Neither MAI nor the court suggested that those copies of the software, made in the course of operating the machine, were distributed to others thereby depriving MAI of licensing fees.[133] The copy was internal and ephemeral and therefore, could not have displaced any licensing fees for MAI.

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[124] *Id.* at 365 (citing Sega Enters. v. Accolade Inc., 977 F.2d 1510, 1524 (9th Cir. 1992)).

[125] *Id.* at 365–66.

[126] *Id.* at 366 (citing *Sony Corp.*, 464 U.S. at 450).

[127] *Id.*

[128] *Id.*

[129] *Id.* at 361 ("It is undisputed that all plaintiffs . . . have MAI computers at their offices and use MAI's copyrighted operating system software in their machines without having obtained a license or any other permission from MAI.").

[130] MAI's exclusive rights to copy and publicly distribute its software would have been violated when the service technician (or possibly an MAI customer) copied and gave the software to the technician.

[131] *Advanced Computer Servs.*, 845 F. Supp. at 361 ("It is also undisputed that field technicians of each plaintiff used MAI's operating system software . . . in the course of servicing customers' computers.").

[132] *See supra* note 37.

[133] Indeed, by the court's own admission, there is no independent market for MAI's operating system software. In reciting the facts of the case, the court acknowledged that "MAI computers are unique; their parts and operating system software do not work in other

B. *Antitrust Violations*

In an illegal tying claim under the antitrust allegations, the plaintiffs accused MAI of tying licenses for MAI operating system software to maintenance services for MAI computer equipment.[134] In evaluating this claim, the court considered the following factors:

> (1) The existence of two separate products;
>
> (2) An agreement conditioning purchase of the tying product [MAI software] upon purchase of the tied product [maintenance contract] . . . ;
>
> (3) Seller's possession of sufficient economic power in tying product market [MAI software] to restrain competition in tied product market [maintenance contract]; and
>
> (4) A not insubstantial impact on interstate commerce.[135]

The court concluded that two separate products are involved because the repair market is distinct from the MAI software market and demand for maintenance services exists independently of demand for the software.[136] With regard to the second factor, the court concluded that there was no evidence that licensing of the MAI operating system was dependent upon the purchase of maintenance services.[137] Because the plaintiffs failed on the second factor, the court did not consider the last two factors.[138]

Although the court may have concluded correctly that licensing of the operating system was not tied to the purchase of maintenance services (so that there was no antitrust violation), the decision leaves MAI customers with

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manufacturers' minicomputers." *Advanced Computer Servs.*, 845 F. Supp. at 359. This fact suggests there is no market for MAI's operating system software independent of the market for the hardware because the software simply cannot be used without MAI hardware. Second, the court acknowledged "[t]he operating system software . . . is integrated into the computer." *Id.* at 360. This fact suggests that MAI customers, in fact, license a bundled system—they take the hardware and software in a package because neither can be used without the other. As a result, it is difficult to determine how a technician could sell or otherwise distribute an unlicensed copy of the software.

[134] *Id.* at 360.

[135] *Id.* at 367–68 (citing Service & Training, Inc. v. Data Gen. Corp., 963 F.2d 680, 683 (4th Cir. 1992) (citations omitted)).

[136] *Id.* at 368.

[137] *Id.*

[138] *Id.* at 368–69.

limited choices regarding maintenance of their computers. MAI customers may purchase MAI maintenance services which, according to the court, are higher priced than the services from independent organizations.[139] MAI customers are also free to license the operating system as well as diagnostic software and train one of their own employees in servicing the equipment.[140] This option, however, may be cost effective for only large organizations with lots of equipment. The final option is to use an independent service organization. However, customers that use this option face the risk of a lawsuit for violation of the licensing agreement. To avail themselves to the repair market, independent service organizations must develop their own versions of the operating system and diagnostic software which, the court admitted, can be very expensive.[141] As a result of the court's conclusions, customers of MAI computers have limited options for repair services.

The analysis of the antitrust tying issue is somewhat surprising in light of the Supreme Court's recent decision in *Eastman Kodak v. Image Technical Service.*[142] In *Eastman Kodak*, the Court analyzed the replacement parts and service market in relation to Image Technical's allegation that Kodak's refusal to sell replacement parts to independent service organizations constituted a monopolization of the parts market.[143] The availability of essential parts only through Kodak and the fact that some independent service organizations were driven out of business as a result of Kodak's policy were cited by the Court as factors that created a presumption of market power.[144] Applying the *Eastman Kodak* decision to the scenario described in *MAI Systems*, a software vendor who attempts to control the repair market by refusing to license the operating system software and by suing independent service organizations for copyright infringement risks violating federal antitrust laws. However, the court in *Advanced Computer Services* acknowledged the right of MAI to license selectively, even if it affects the ability of competitors to provide repair services.[145] The fact that MAI has copyright interests in its operating system software (and thus a limited monopoly granted by law) may be enough to distinguish its position from that of Kodak so that no antitrust concerns are present. In some respects, however, the operating system serves the role of a "part" in repair of the computer so that under the *Eastman Kodak* case, MAI's actions would be prohibited.

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[139] *Id.* at 367.
[140] *Id.* at 368.
[141] *Id.* at 367–68.
[142] 112 S. Ct. 2072 (1992).
[143] *Id.* at 2089–92.
[144] *Id.*
[145] *Advanced Computer Servs.*, 845 F. Supp. at 369.

VI. OTHER CONSIDERATIONS

In reaching the conclusion that MAI's copyright interests were violated, the Ninth Circuit in *MAI Systems* and the district court in *Advanced Computer Systems* failed to consider the implications of a decision that allows the use of copyright law to control unauthorized use of computer software.

A. *Technical Considerations in Applying the Decisions*

The *MAI Systems* and *Advanced Computer Services* decisions, arguably, do not apply to computer vendors who distribute the computer's operating system in read only memory (ROM) instead of RAM.[146] If the operating system is provided in ROM, then the computer may execute the program directly from this location without first copying it into RAM.[147] If the operating system is distributed in this manner, then a copy of the program is not made when the computer is turned on. If no copying occurs when the computer is turned on, then the decisions do not apply and an unauthorized user of the computer cannot be guilty of copyright infringement.

The fact that the operating system is loaded into RAM for use is simply the result of a technical design decision made by the computer vendor. Copying the software into RAM makes the computer faster and more efficient. If a vendor chooses to distribute the operating system in ROM (rather than on disk so it must be copied into RAM), even unauthorized users of the software cannot be guilty of copyright infringement because a copy of the software is never made. This argument could, perhaps, be challenged on the basis that whether the operating system resides in RAM or ROM, the instructions must be copied into the processor's registers for execution. The copying of individual program instructions into registers might then be considered the copying necessary to find copyright infringement. However, during program execution, instructions are quickly supplanted by subsequent instructions so that it would be difficult to argue that the copy that is made is fixed for the purposes of copyright law.

Whatever the distribution medium and the extent of copying into registers, this technical discussion illustrates the difficulty in using the unauthorized starting of a computer as the basis for copyright infringement. The decisions apply directly to cases in which a program must be copied into RAM to be used by the computer. Its application to cases in which a program resides in ROM is tenuous. The fact that no copying occurs when a program is distributed in ROM suggests that the first question to answer in deciding the

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146 VERGARI & SHUE, *supra* note 4, at 16–17, 22; MILLARD, *supra* note 5, at 13.

147 VERGARI & SHUE, *supra* note 4, at 16–17.

issue of copyright infringement is what, exactly, did the machine do when it was turned on. If copying of the program into RAM did not occur, then the issue of copying of program instructions into registers must be considered.[148] This inquiry necessarily ignores the more important issues of why the computer was turned on and what effect the use had on the copyright owner's interest in the copyrighted work. If the purpose of turning on the computer is to repair it and this use has no effect on the market for the copyrighted work (so that copyright infringement does not occur), then the issue is resolved without a detailed, technical inquiry regarding the extent of copying and where the copying took place. In the absence of considering the purpose and effect of the use, all users, whether covered by section 117 of the Copyright Act or not, are susceptible to copyright infringement suits.

B. *The Decisions Are Easily Circumvented*

Even if the Ninth Circuit in *MAI Systems* and the district court in *Advanced Computer Services* were correct in concluding that the service technicians were guilty of copyright infringement, the decision is easily circumvented. For example, an MAI customer who is authorized under the licensing agreement to use the software and, hence, to make a copy of the operating system in RAM can simply turn on the computer prior to the repair technician's arrival. The copy in RAM is then made by the authorized computer user (the MAI customer) so the copying does not extend beyond the scope of the licensing agreement such that copyright infringement occurs. If use of the program is governed by a licensing agreement, the repair technician's use of the software may violate this agreement, but the technician's use does not result in copyright infringement based on unauthorized copying.

VII. CONCLUSION

MAI used its copyright interests in its software to control use of the computers on which its programs run. By controlling use, MAI was able to control the repair market for its computers. MAI acquired the control because the Ninth Circuit was willing to find that the unauthorized use of software resulted in copyright infringement even though the software was loaded into RAM automatically and the copy remained internal to the computer. In

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[148] As noted earlier, individual instructions are copied so they may be executed. Therefore, copying takes place incrementally so that at any one point in time, only a few instructions of the program are duplicated within the machine. *See supra* notes 4–13 and accompanying text.

addition, the Ninth Circuit failed to consider whether section 117 protection should have been extended to MAI customers because they are owners, rather than licensees, of the software. Furthermore, the Ninth Circuit ignored the possibility of a fair use exception to Peak's use. Such an analysis would have revealed that Peak did not violate MAI's copyright interests by using the operating system software licensed to MAI customers.

The finding of copyright infringement in *MAI Systems* should be reversed. The decision extends software developers' exclusive rights at the expense of software users who have legitimate reasons for using the computer and the software. The Ninth Circuit's ruling permits software vendors to use copyright interests in their programs to control who uses the machine and in what capacity. In executable software cases, such as *MAI Systems*, in which copying must occur for the computer to function, the unauthorized user should not be liable for copyright infringement unless an analysis of the purpose of the copying and the effect of use shows clear interference with the copyright owner's interests.